



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,385	07/28/2008	Shuichi Kitano	59623US005	3424

32692 7590 11/26/2010
3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

LE, HOA T

ART UNIT	PAPER NUMBER
----------	--------------

1788

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/26/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary	Application No. 10/598,385	Applicant(s) KITANO ET AL.	
	Examiner H. (Holly) T. Le	Art Unit 1788	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12 and 16-22 is/are rejected.
- 7) ☒ Claim(s) 9 and 13-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/17/07 & 8/26/08</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 16-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is indefinite because it recites a method of making an article but merely recites “forming” an article without any active, positive steps delimiting how the article is actually made. Other claims are deemed indefinite in view of their dependency upon claim 16.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10-12 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 7,153,575 to Anderson et al (“Anderson’575”).

Claim 1: Anderson’575 teaches a coated particulate material comprising a particulate covered with a first heat curable component and a second heat-curable component covering the first layer; the curable component may be selected from an epoxy resin. See paragraph bridging columns 7 and 8 and col. 8, lines 42-48. The part where the

Art Unit: 1788

particulate covered with the first heat-curable component is considered the core and the part comprising the second heat-curable component covering the first curable component is considered the sheath. The coated particulate material comprises curative agent for the curable resin (Anderson'575, col. 8, lines 56-58). The coated particulate material also comprises a thermoplastic component (Anderson'575, col. 16, lines 48-56). Because epoxy is suggested as one of the seven resins equivalent to others as the curable component, one of ordinary skill in the art would have found it obvious as a matter of choice to select epoxy resin as the curable component.

Claims 2-4: Anderson'575 teaches that the thermoplastic component be present in at least one coating layer (Anderson'575, col. 16, lines 47-56). Therefore, one of ordinary skill in the art would have found it obvious to include the thermoplastic component in both layers to improve the dust suppression and crash resistance of the particulate material.

Claim 5: The curing agents include a hexamethylenetetramine (col. 15, lines 65-66) which is a tertiary amine compound.

Claim 6: Anderson'575 teaches a thermoplastic component comprising thermoplastic resin functionalized with an epoxy (col. 17, line 61 to col. 18, line 2). Thus, the thermoplastic component is an epoxidized thermoplastic resin.

Claim 7: The epoxidized thermoplastic resin contains an ethylene-glycidyl(meth)acrylate copolymer (Anderson'575, col. 6-13).

Claim 8: The sheath layer substantially continuously coats the core (Anderson'575, col. 20, lines 21-25).

Art Unit: 1788

Claims 10-11: Multiple coating layers are suggested by Anderson'575 at col. 20, lines 37-57 wherein curable resin for the inner layers can be located between the resins of shell layers.

Claim 12: The particulate material (particle like) having The sheath layer substantially continuously coating the core (Anderson'575, col. 20, lines 21-25).

Claim 16: Anderson'575 teaches a material comprising a plurality of proppants wherein at least one proppant having the structure as discussed in the instant claim 1 above.

See Anderson'575, col. 26, line 29 to col. 27, line 3.

Claim 17: Anderson'575 teaches molding a plurality of coated particulate material into a molding material; that is, consolidating the coated particles in to a proppant pack or gravel pack. See Anderson'575 at col. 26, lines 39-44.

Claim 18: Although Anderson'575 does not specify the device for blending the coated particulate material, it would have been obvious as a matter of choice to select any commercially available device including a single crew; especially when the use of the device does not alter the characteristics of the material.

Claim 19: The kneading (i.e. mixing and blending) occurs at a low temperature (e.g. 70F. See Anderson'575, col. 26, lines 45-50) which is lower than the curing temperature of the resins made up the coated particulate material).

Claim 20: The thermoplastic component has a low melting point (from 40 to 80C, Anderson'575, col. 17, lines 37-40); therefore, it can be melted at a temperature lower than the curing temperature of the heat curable particulate material.

Art Unit: 1788

Claim 21: The particulate material becomes fully cured composite in the application under molding (i.e. stress). See Anderson'575, col. 6, line 62 to col. 7, line 37.

Claim 22: Anderson'575 teaches molding a plurality of coated particulate material into an article of molding material; that is, consolidating the coated particles in to a proppant pack or gravel pack. See Anderson'575 at col. 26, lines 39-44.

Allowable Subject Matter

4. Claims 9 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art references of record, singly or combined, teaches or suggests a heat curable pellet having the structural configuration as described in claims 9 and 13-15.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. (Holly) T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 12:30 p.m. to 9:00 p.m. (EST), Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1788

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. (Holly) T. Le/
Primary Examiner, Art Unit 1788

November 21, 2010